

WHAT IS CLAIMED IS:

1. A device for generating tunable light pulses comprising:

(a) a pulse laser light source for producing femtosecond light pulses having an optical spectrum;

(b) a non-linear optical fiber for modifying the optical spectrum of the femtosecond light pulses, said optical fiber taking advantage of solitonic effects; and

(c) an optical compressor preceding said non-linear optical fiber.

2. The device according to claim 1, wherein the light pulses coupled into said non-linear optical fiber have a pulse energy of at least one nanojoule.

3. The device according to claim 1, wherein said optical compressor is adjustable to permit changing a temporal frequency progression of the light pulses coupled into said non-linear optical fiber.

4. The device according to claim 1, wherein said non-linear optical fiber maintains polarity or is dispersion-shifted.

5. The device according to claim 1, wherein said non-linear optical fiber has a core diameter of less than five micrometers.

6. The device according to claim 1, wherein said non-linear optical fiber comprises a microstructured photonic fiber.

7. The device according to claim 1, wherein said non-linear optical fiber has a length of less than one meter.

8. The device according to claim 1, further comprising an additional optical compressor following said non-linear optical fiber.

9. The device according to claim 1, further comprising an optical measuring instrument for characterization of the light pulses modified by means of said non-linear optical fiber.